

6

Science Standard
6.6.b.



Energy and
Material Resources:
Renewable or Not?

California Education and the Environment Initiative

Approved by the California State Board of Education, 2010

The Education and the Environment Curriculum is a cooperative endeavor of the following entities:

California Environmental Protection Agency
California Natural Resources Agency
Office of the Secretary of Education
California State Board of Education
California Department of Education
California Integrated Waste Management Board

Key Leadership for the Education and Environment Initiative:

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Key Partners:

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Lesson 2 What Do Humans Need?

None required for this lesson.

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VA #1 Lake by a Small Town



VA # 2 Biomass

Types of Biomass

**Plants**

(wood and other plant parts)

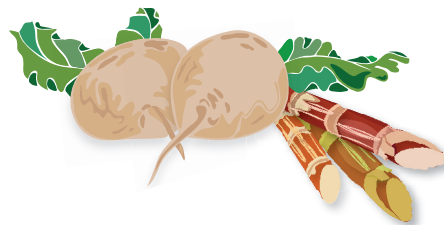
**Crops and Animals**

(corn, rice, sugar cane,
sugar beets, manure)

Energy Sources Created from Biomass

**Biodiesel**

(made from plant oils
and animal fats)

**Alcohol Fuel**

(Ethanol, made from crops)

Biomass:

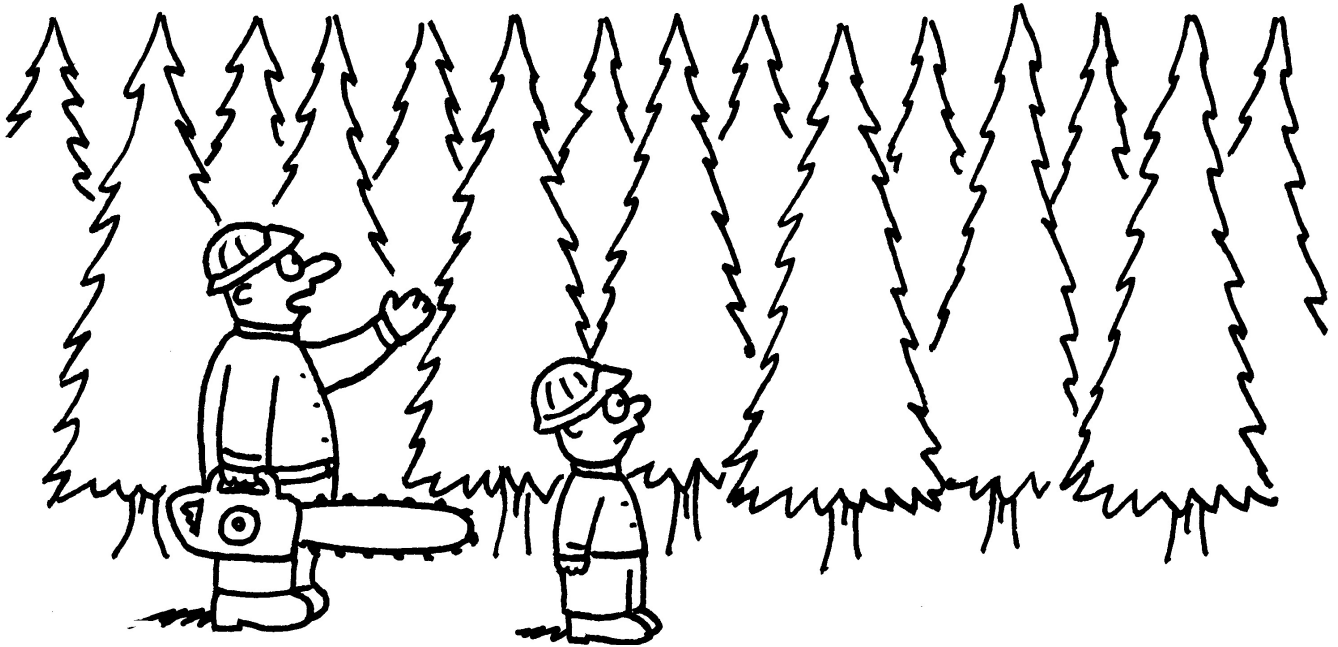
1. The total mass of living matter in a given area.
2. Organic material made from plants and animals.
3. Organic material used for fuel.

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VA #4 Toilet Paper

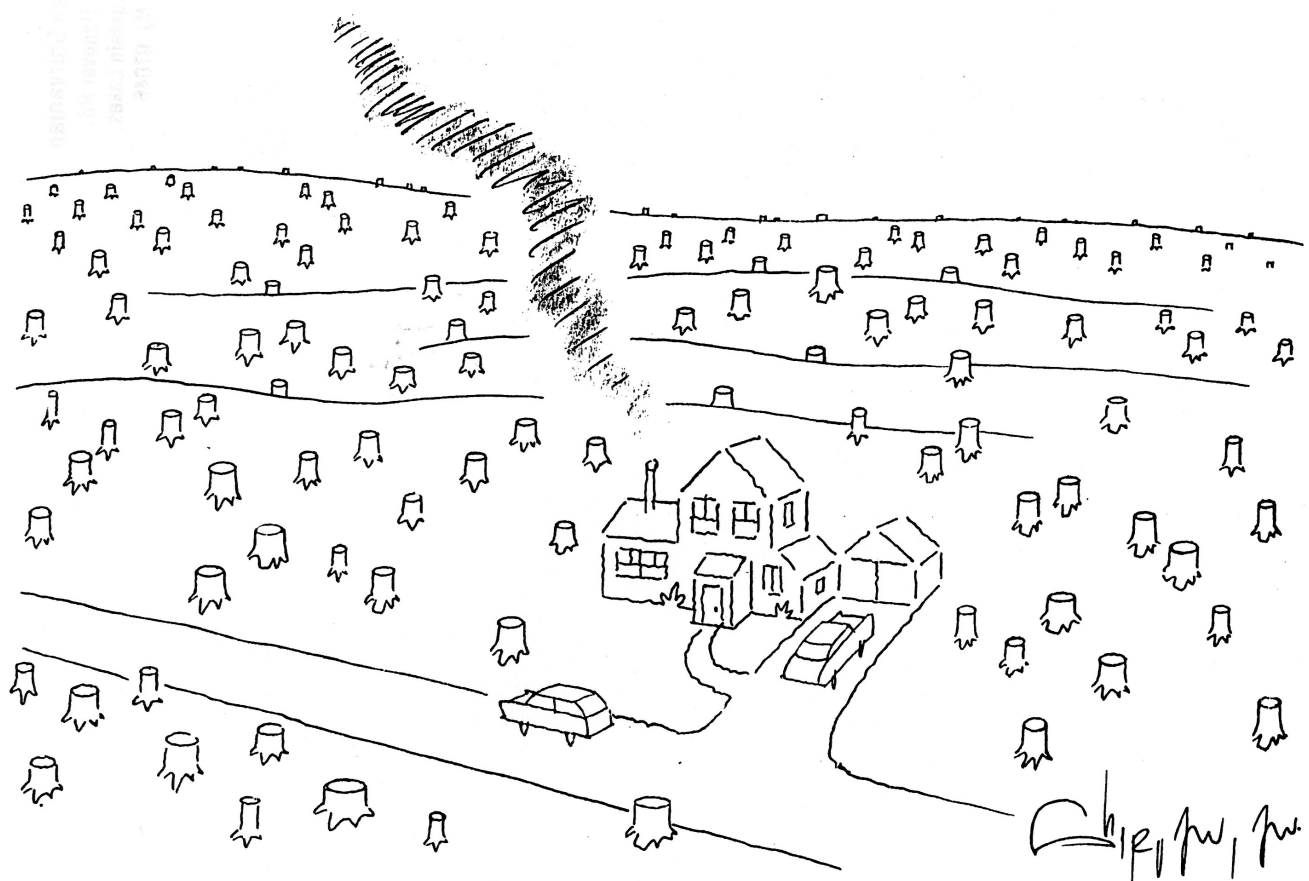


VA #5 Junk Mail



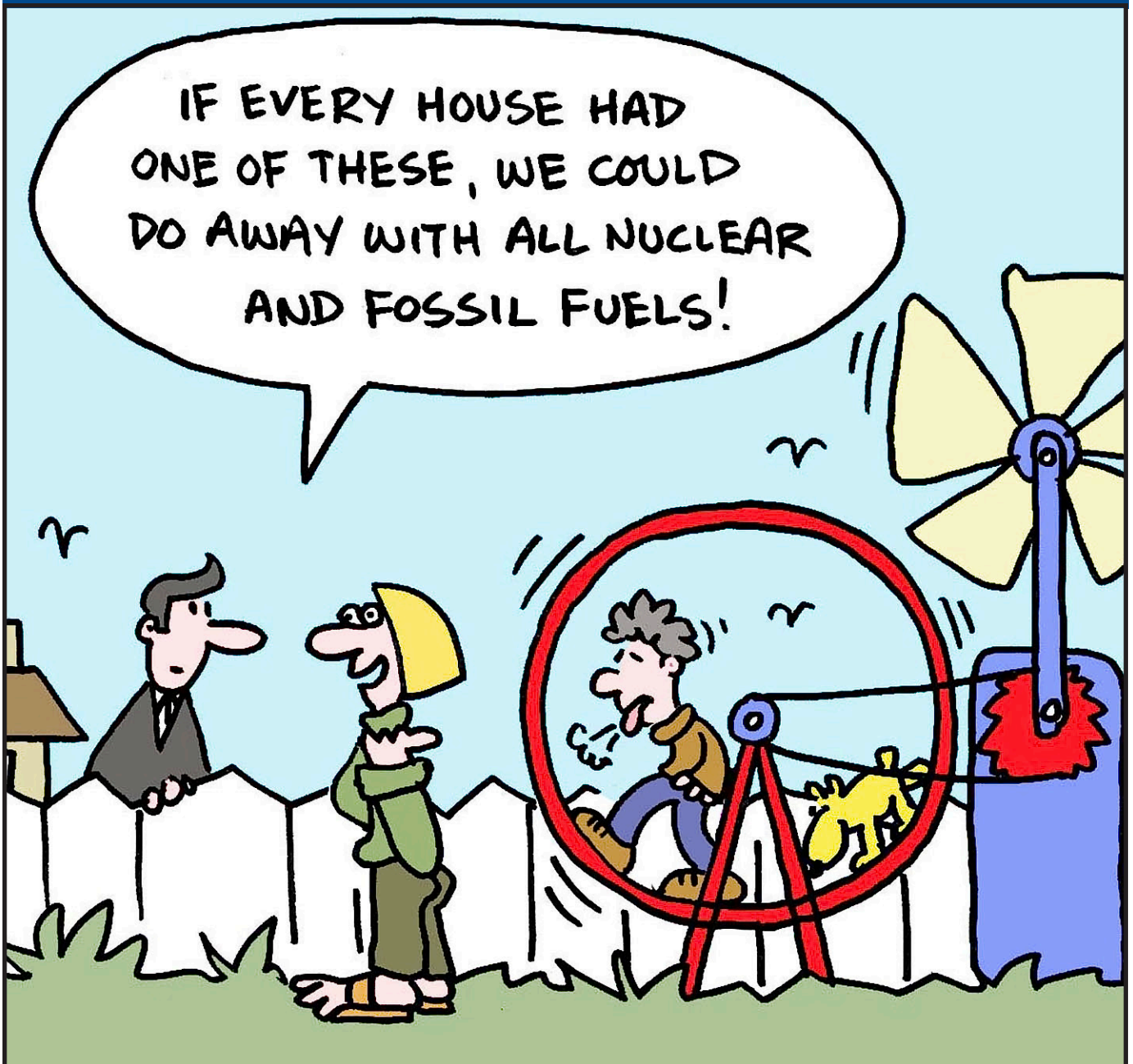
“One day son, all of this junk will be mail!”

VA #6 Wood-Burning Stove



“Can you believe it? Since we installed our wood-burning stove, we’ve spent next to nothing on heating oil”

VA #7 Boy- and Dog-Powered Fan



VA #8 Fossil Fuels



VA #9 Sunshine Going to Waste?



“When I think of all this sunshine going to waste...”

VA #10 Fans



VA #11 Fishing Scenarios

Scenario 1:

Imagine that everyone in the town fishes using a rod and reel. The people have a tradition—they never keep more than one fish to eat. One day, a newcomer brings a big net and starts scooping up hundreds of fish at a time. This person plans to sell the fish to a town far away.

Scenario 2:

Imagine that everyone in the town fishes using a rod and reel. The people start a new tradition—everyone in town decides to eat fish for every meal, every day. This means that they have to catch and keep many more fish than they used to.

Scenario 3:

Imagine that the fish population has dropped very low. Now there are not enough fish for everyone in the town to continue catching and eating. When people go to the lake with their rod and reel, they often come home empty-handed.

VA #12 Aquaculture



VA #13 Sample Decision Flowchart

Question:



Option 1 (Human Practices or Production):

Option 2 (Consumption):



Pros

Cons

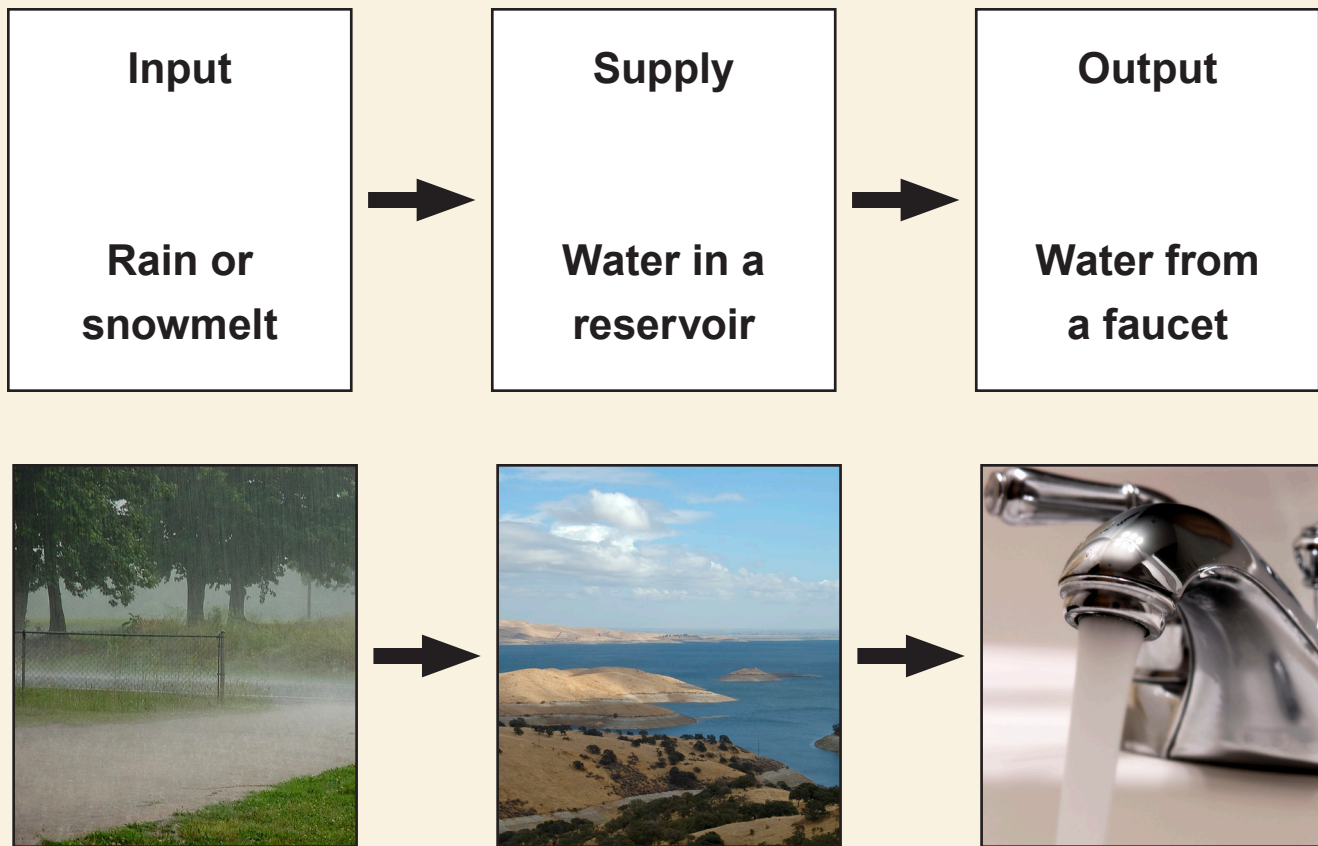
Pros

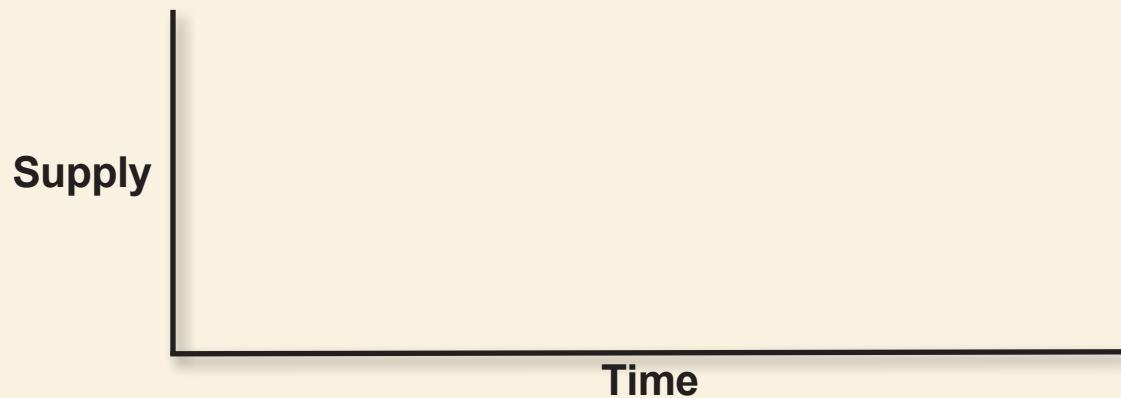
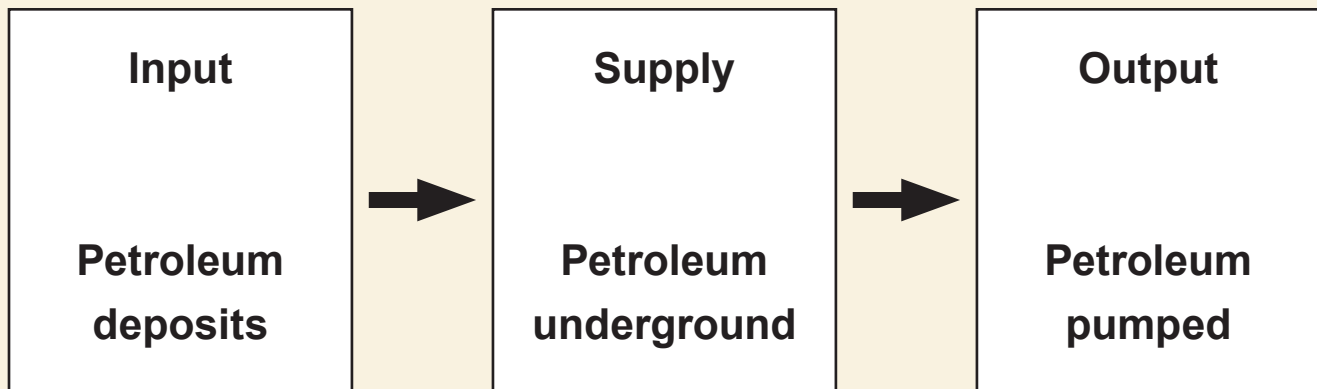
Cons

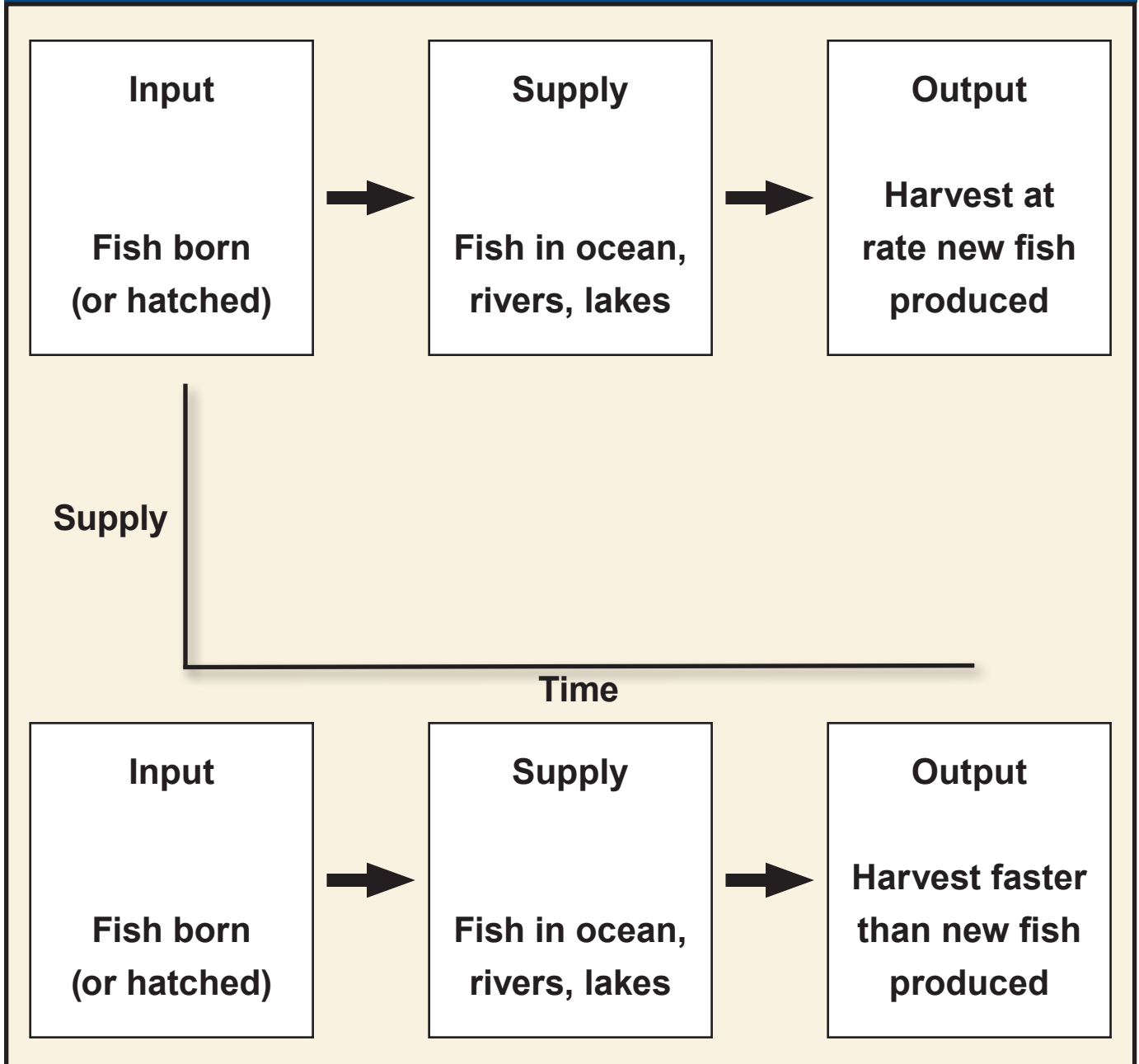
Decision



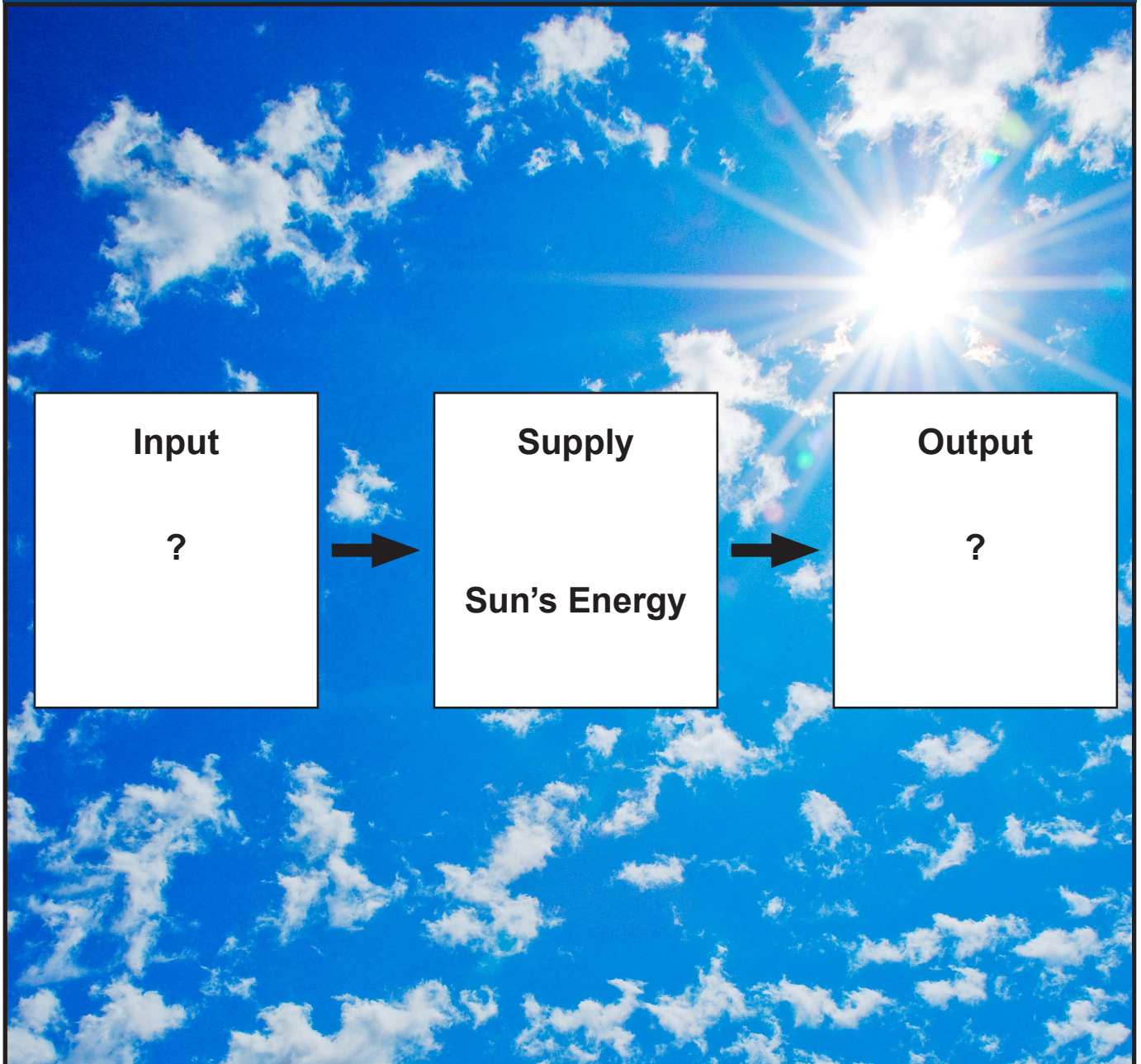
VA #14 Resources: Input, Supply, and Output



VA #15 Petroleum: What Type of Resource?

VA #16 Fish: What Type of Resource?

VA #17 Sun: What Type of Resource?



VA #18 Reclaimed Water





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